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GRAND ISLE COUNTY.

The following description of Grand Isle county was written in 1814, for a proposed Gazetteer of Vermont, which was never published.

The County of Grand Isle is composed of a tongue of land, joined to the main land of Canada, and several islands in Lake Champlain. The boundary is as follows: Beginning where the west line of this state intersects the latitude of 45 degrees, thence south, on the west line of the state, so far as to include Providence and Stove Islands, thence east and north, at one mile distance from the main land of the Counties of Chittenden and Franklin, till it reaches the latitude of 45 degrees and thence on that parallel to the place of beginning. It contains besides the tongue of land joined to Canada, the two large islands formerly called Grand Isle, and now usually called the North and South Islands, the Isle La Motte, Butlers Island, Savages Island, Providence Island and about nine or ten others of small extent. It is divided into five townships, Alburgh which is situated on the tongue, Vineyard,* on the Isle La Motte, North Hero, which is the northernmost of the two large islands formerly called Grand Isle, Grand Isle, on the north part of the Southern-most of the two large Islands, and South Hero on the south part of the same island. The small islands in the vicinity of Grand Isle and South Hero are incorporated with those towns, the others are not incorporated. Alburgh contains about 1840 acres, Vineyard 4620, North Hero 6272, Grand Isle 9365, South Hero 9065, Butlers Island 200, Savages Island 200, Providence 200, and the others 864 making in the whole 32626 acres. The soil is generally excellent, of the varieties of loomy, sandy, marly and clayey, its marle

* The name of this town is now the same as that of the island.

more generally prevailing. There is but little waste land, excepting a few marshes where the water is confined by beeches, thrown up by the waters of the lake. The principal productions for market are pot and pearl ashes, wheat, corn, beef, pork and cider, of which they begin to make large quantities.

The foundation of these islands is generally a rock of lime stone, of different varieties, but mostly of the compact kind, and in some parts that which is shelly abounds. The timber is of all kinds found in the state excepting Chesnut. Apples, cherries and plumbs are in great perfection, but peaches, quinces, and some other fruits do not thrive. All kinds of corn and most useful vegetables are in abundance. Flax for several years was not productive, but now succeeds well.

The levelness of the country and the small extent of the islands make streams scarce, and there are none sufficient for driving mills except for a few months in the year. The waters of the lake are pure and ight, and in this county never produce fogs. This is doubtless owing to the temperature of the water in the season of fogs being always lower than that of the, air. By the great depth of these waters and their constant agitation their temperature is more constant than that of the atmosphere and allays the heat of summer and prevents the untimely frosts of spring and autumn. So great has been their effect in some seasons that the most tender vegetables have continued to flourish till the month of December.

There is reason to believe that at some remote period the whole of this country and the adjacent parts have been covered with the waters of the lake. The shells of large clams have been found incorporated with the lime stone on the highest parts. Shelly marle, with the shells very perfect, is found in many places but a little below the surface. The hollows and bogs between the hills have not such depth of peaty substance as on the higher parts of the main land, where decayed vegetables have been long accumulating. Where the barrier was, which confined the waters to such a height, the writer of this article is unable to say, having never become sufficiently acquainted with the country. It was probably not far from the Three Rivers, in Canada, and this and the extensive country as far as above Montreal, was one vast lake. From the effects of water which are now to be seen, it appears that the lake was not reduced to its present level at once but at three or four dis-

tant periods. At the mouths of some of the rivers there are three distinct banks one above another, which, evidently, at different times, bounded the waters of the current. It is probable, that after the great barrier was broken, an obstacle at St. Johns or Chamblee still confined the waters of Champlain, for a series of years, but which at length giving way permitted them to sink to their present level. No considerable alteration has taken place since the country was visited by the Europeans.

The length of the lake is about 125 miles. Its breadth is various from one to eighteen miles and its depth in the channel from six feet to 100 fathoms. The difference between the lowest and highest water in the lake is about eight feet. It is usually at its height about the middle of May. Sometimes it rises again before the commencement of winter, but usually continues low till in the winter or opening of spring. It is usually passable by ice in this county as soon as the last of December or beginning of January, but the broader parts of the lake are not frozen till February and, in many seasons the broad lake is open during the year. In the cold of winter the ice crowds itself to a considerable distance on the shores and in the lake is either elevated or depressed so as to form cracks of dangerous passage. This pressure undoubtedly arises from the expansion which the ice is known to make in hard freezing. It ever occupies a greater space than the water of which it is composed and is consequently of less specific gravity. That this pushing of the ice is to be imputed to the falling of the water and shortening the radius of convexity into which it was at first frozen cannot be correct. It is much greater than such an alteration would warrant and frequently takes place when there is no apparent decrease of water.

From the large islands in this county the main land, on either side, is at the distance of from two to six miles. From the middle of South Hero proceeds a sand-bar across the lake, over which the water is so shallow as to be fordable nearly half the year. It is believed the mouth of the river La Moille was formerly considerably to the north of this bar. It is now more than a mile south. The sand brought down by that river on both sides has been long accumulating, and is still driven on to the bar by the force of the waves and at some future period will probably form a permanent road. To assist this operation of nature, by art, would be an important

undertaking, as there is no other place at which the lake can be conveniently crossed, for the space of more than fifty miles. The ferry from Grand Isle to Cumberland head in the State of New York is about two miles in width. From Grand Isle to North Hero is a ferry of half a mile and from North Hero to Alburgh and from Alburgh to Vineyard the distance at the ferries is about the same. There is also a ferry for foot passengers of three miles from the south point of South Hero to Colchester point. All animals which move in the winter pass freely from the Islands to the main land by ice, and bears, wolves, foxes, deer, squirrels and other creatures pass in the summer by water. They perform this voyage not in barges made of shingles or barks as Winterbotham and others have related but by swimming in the water. They have often been killed in thus crossing, and bears have been known when fatigued to leap into canoes which came near them and thus be ferried ashore by the affrighted mariner.

The lake is well stored with various kinds of fish, such as sturgeon, salmon, pickerel, pike, shad, bass, perch and others to numerous to mention. Some of these are taken at all seasons of the year. The fishermen make small houses on the ice, and there, by their fireside, continue to angle during the severity of winter. The fowls which frequent these waters are geese, ducks, quails, loons and many of the diving and wading species.

The extensive valley which embosoms the lake and its islands, the distant mountains, towering above the ordinary clouds, afford a prospect at once delightful and sublime. Here the dreary gloom of winter and the charming verdure of summer are seen at one view. Snow is visible on the highest summits ten months in the year.

The county of Grand Isle appears to have been a favorite spot for the native Indians. The lake and the rivers which supply it afforded them fish and the forests plenty of game. Near the Sandbar they had a manufactory of such implements as were made of flint stone. As there is none of this kind of stone within the County, it must have been brought from a distance. It was there wrought into hatchets, arrows, chissels, spear heads, and a variety of other forms, and thence distributed to those who bordered on different parts of the lake. The fragments of their works are found

in abundance. Many of their instruments begun and broken in making, or not finished, were found by the first settlers.

The first discovery of this county, by Europeans, was by Sir Samuel Champlain, in 1609. No permanent settlement was made previous to the revolutionary war. During that contest the British erected a block-house in North Hero which they held till the western posts were given up in 1796. In 1784 the settlement began and has rapidly progressed until the present time(1814). The number of inhabitants, according to the census of the United States, taken at different times, was as follows:

	1791	1800	1810	1820*	*1830
Alburgh,	446	750	1106	1172	1239
Vineyard,	47	135	338	312	459
North Hero,	125	324	552	503	638
Grand Isle,	262	611	623	898	648
South Hero,	275	678	826	842	718
Total,	1155	2498	3445	3727	3702

In the first settlement of this county intermittent and remittent fevers were very frequent but are now less to be feared. The spotted fever has been known but in a few instances, and the epidemic of 1813 was far less severe than in most towns in the state. Persons of all ages enjoy a continuance of health and as great freedom from sickness as in any part of New England.

* The two last columns were added by the Editor.

For the Green Mountain Repository.

BOTANY.

The importance of botanical knowledge to the physician, cannot be questioned. Every person, who is in the least conversant in medical knowledge, knows that botany already furnishes a very considerable branch of our materia medica. And without an acquaintance with this science, the physician himself is liable to be imposed upon, and the life of the patient is left at the mercy of his credulity. Alas! how many there are, at the present day, who are admitted to the degree of Doctor in Medicine, while they are wofully ignorant in almost every branch of their profession. In the space of three short years, with seldom one of diligent applica-

tion, the most illiterate youth is raised from an ordinary school-boy to the highest honors of the profession, furnished with his credentials and placed as a guardian over the lives of community. For the honor of the faculty, and for the good of our country, it is high time that the requisitions to practice were increased. No person, who has no other previous qualification, but a common English education, should be entrusted with the guardianship of our healths and lives, until he has spent at least five years in close application to the study of his profession and the sciences connected with it. So long as the graduate has to spend the same period that is required of the most illiterate to gain the profession, the men of liberal education, who devote themselves to it will be comparatively few. Our country will continue to swarm with physicians of illiberal views, who are unacquainted with every other department of science and consequently deficient in their own.

The medicinal virtues of many of our native plants are already known: but this subject has not yet been investigated with that degree of attention which it justly merits. But the lately discovered efficacy of some of our plants in preventing or curing several of the most formidable on the catalogue of human maladies, ought to inspire us with courage and diligence in investigating the medicinal virtues of the numerous vegetables with which our country abounds. The harvest is truly plentious but the laborers are yet few. The medical botany of the United States, although it has of late employed the attention of several eminent physicians, presents a field in which the diligent and persevering may reap honor to themselves and bestow inestimable favors upon their fellow beings. It is not improbable that thousands are now wasting on beds of sickness and descending rapidly to their graves, whose dwellings are surrounded by plants, which, judiciously applied, would restore them to health and activity. And perhaps the weak and emaciated mendicant, who slowly hobbles from door to door, might find an antidote to all his infirmities, in the very herbage, which he presses beneath his feet, or in the grassy turf which is often his only pillow.

Although I disclaim all encomium of quackery, I must say that I believe there is much valuable knowledge of the medicinal virtues of our native plants, in the possession of our aunts and grandmothers, which prejudice has hitherto induced the physician to

despise. This knowledge it is true is vague and mingled with the traditions of older times. It requires the pruning hand of science, and the test of enlightened experience to separate the metal from its dross—to ascertain the properties of each individual plant and divest it of its reputed virtues. It is high time that tradition were tried by the criteron of experiment, and that the relics of superstition were cleared away—that the botany of our country were thoroughly explored, the imaginary virtues of our plants handed over to oblivion with the ingredients of the celebrated charms and love potions of the ancients, and their real excellencies, like the perfect metals, rendered more shining and precious in their passage through the furnace of experimental scrutiny.

Botany claims our attention as a cheap and innocent source of amusement. Considered as a science, it is a stupenduous monument of ingenuity and labor. The happy methods, which have been devised for arranging and classifying its objects, afford an illustrous example of the advantage of order in distribution of our ideas, and the facility with which plants may be refered to their respective genera, shows us that the memory is not overwhelmed by the multiplicity of its objects, but by the confusion in which those objects are involved. Hence the theory of botany becomes an object worthy the attention of the man of science, for the discipline it gives to the mind, and the pleasures resulting from orderly arrangement. But its value is increased in a high degree to the practical botanist. To him it is an endless amusement. Although he wanders through the forest or over the meadows alone, he is never without company. At every step some familiar acquaintance salutes him, and he stoops with pleasure to return the compliment. Where the ordinary person could behold no object to cheer the gloom or sweeten the solitude of the wilderness, the botanist recognizes his favorite plants, and to him the desert blossoms as the rose, and the untravarsed wilderness is a garden of pleasure. Whether travelling the road or ranging in the fields—whether engaged in business or devoted to pleasure, botany affords him a cheap and innocent entertainment—relaxes his mind from intenser thought, or divert it from vain and unprofitable roving. Its objects and associations tend to purify the vicious and give contentment to the troubled mind. The gayety and beauty of its scenery diffuse over it a placid serenity and assuage the groser passions of the human breast.

But the pleasures of practical botany are redoubled to the classical student. There he meets with the same plants, which presented by the Roman warrior became the sacred pledge of friendship, and here he recognizes those by which the Druids so long imposed upon the credulity of mankind. The sight of a single vegetable is often sufficient to suggest to his mind some of the greatest achievements recorded in the annals of antiquity, or to recall some of the sweetest strains of the Greek and Roman bards. It is true that our plants have lost many of those reputed virtues, which they possessed in the days of ghosts and hobgoblins, but they have a tendency to awaken in the enlightened mind a train of the most profitable and pleasing reflections.

But of all the great objects to which the study of botany is subservient, that of leading us to a better acquaintance with the Author of our being is certainly, one of the most important and most interesting. The marks of design in the works of creation around us, are so obvious, as to meet the notice of the most superficial observer. But as we extend our inquiries, and trace out the laws of nature on which her phenomena depend the proofs of a designing cause, multiply upon us at every step of our progress, and the wisdom and goodness of a divine intelligence is more completely unfolded.

The animal economy doubtless affords the most obvious examples of the accommodation of means to the accomplishment of an end, which comes under our immediate observation. And the study of anatomy and physiology may be considered one of the most powerful antidotes to atheism, and infidelity. Still the adaptation of means to an end, is abundantly obvious in every part of the vegetable creation. We may as well deny that a watch was made for the measure of time, or that a telescope was made for magnifying the apparent size of an object, as to deny that the organs of plants were designed for the offices which they perform.

THE ORNITHOLOGIST.

Accustomed as our reader must be to the beautiful forms and plumage of many varieties of birds, he will, doubtless, feel an inclination to acquire an idea of the natural history of so interesting a class of the animal kingdom, as that to which they belong.

Birds considerably exceed quadrupeds in point of number, but fall short of them in size. The Ostrich, which is the largest bird known, is much less than many quadrupeds, and the smallest of these is larger than the Humming-bird. All birds are oviparous; they are very long lived, and dispersed over the greater part of the earth. To man, birds are exceedingly useful, although but few species have been domesticated: the flesh of many affords us delicious food, and the plumage of others is rendered valuable by its application to a variety of purposes.

The bony frame in birds is much lighter than in quadrupeds; the cavities are larger, and it is altogether well calculated for the purpose of flight. The strong ridge down the middle of the breast bone is adapted for the attachment of those powerful muscles by which the wings are moved. The breast bone is very large; the neck long and flexible; and the spine immoveable. The bones of the legs are analogous to those of the hind legs of quadrupeds, and those of the wings, to their anterior limbs: the former terminate usually in four toes—three of which are placed before, and one behind. Some birds have only three toes, and a few but two; and their position varies considerably in different individuals. The termination of the wings is in three joints only; the outer one of which is very short.

To whatever bird we may turn our attention, we shall find that it is furnished with a beak nicely adapted for its food and manner of feeding; and that there is often a marked affinity between the beak and the foot. The celebrated Cuvier states, that we never meet with the sharp talons of the Eagle accompanying the flattened beak of the Swan. The birds which are mounted upon long stilt-like legs, have either long beaks or long bills, and sometimes both, to enable them to reach their food without difficulty—the powerful legs and claws of the rapacious order, enable the birds to seize their prey and assist them in tearing it;—the claws of the Woodpecker, which, by means of its hard bill and long barbed tongue, is enabled to open clefts, and extract the insects which it eats, are so well adapted to its habits, that the young ones can climb up and down the trees before they are able to fly.

The sight of birds, especially those of the rapacious kind, is very acute: They possess the power of accommodating the eye to the various distances of objects, so as to see clearly such as are

a great way off, and also those which are close to them. They derive this power, it is supposed, from a singular arrangement of scales round the iris, which enables them to elongate or shorten the axis of the eye, according to circumstances. It has been stated, on good authority, that within a short time after an animal has been killed, when not a speck was previously seen in the heavens, Vultures, in great numbers, have appeared approaching from immense distances towards the carcass, although not the least odor from putrefaction was perceptible. Similar facts are related, accompanied by such circumstances as have led authors to believe, that the powers of scent in some rapacious birds, are even greater than those of vision.

Birds also possess the sense of hearing in great perfection. They have no external appendages to the ear, except feathers. The organs of touch are more or less powerful in different birds. It is worthy of remark, that the bills of Ducks, Geese, and others of similar habits, are covered with a delicate membrane, so abundantly supplied with nerves, as to enable the birds to discover the food they seek beneath the surface of the mud.

The plumage of birds is no less admirable for its nice adaptation to their necessities and manner of living, than for its richness and variety of color. The feathers next the skin are furnished with a sort of down, which keeps the body of the bird warm; the exterior ones are neatly folded over each other, tending in the same direction, and calculated, by their formation, to insure speed, as well as to keep out the wet and cold. Certain glands upon the hinder part of the back afford a quantity of oil, which the bird presses out with its bill, and rubs over its plumage to smooth and render it capable of affording a greater resistance to water. The Aquatic Birds have a more bountiful supply of this oil than those which live on land. The exterior feathers have a series of filaments regularly arranged on each side, forming two beards;—the filaments of one being longer than those of the other; the edges on both sides are perfectly even, and neatly tapered off, by all the filaments decreasing to a point at their extremities.

The bones of a bird are hollow, and admit air from the lungs into their cavities; thus the specific gravity of the body is decreased, and the bird is better able to sustain itself on the wing. A number of air-bags, or cells, which communicate with the lungs,

and run the whole length of the body, tend materially to the same effect: by means of these air-bags, which birds are enabled to fill or empty at pleasure, they can increase or diminish their specific gravity, more or less, as may be most expedient, in the various actions of diving, (if water-birds,) soaring from the earth, or alighting upon it. Air-cells also extend along the muscles; and these, in such birds as are most remarkable for their power of flight, are particularly large. Even the barrels of the quills are hollow and contain air; so that a bird may be said to bear some resemblance to an inflated balloon.—Its air-cells, &c. render it so buoyant, that the body is indebted for but little support to the wings, which are therefore left, in a great measure, free, to increase the speed or direct the course. The addition to its specific gravity, obtained by compressing the body, so as to expel the air from the cells, enables the bird, if aquatic, to descend rapidly from the surface of the water; or, if rapacious, to pounce with greater velocity from its usual elevation, upon its prey beneath. The wings are placed in the most advantageous situation for the purpose of flight; the pectoral muscles, which are chiefly concerned in putting them in motion, are much stronger than in other animals.

The power of the wings decreases, by almost imperceptible gradations, through different tribes, until at length the faculty of flying ceases altogether. While a few of the quadrupeds are endowed with wings which enable them to soar aloft from the earth, there are birds whose puny pinions will not support them for an instant in the air. Some possess the power of running with astonishing swiftness; others are capable of swimming with different degrees of facility; a few can neither run nor fly;—but to these, Nature has not been altogether a niggard; for where the Ostrich could not wade, nor the Eagle swim, the Penguin—whose feet Buffon describes as resembling two broad oars, so situated as to render the bird exceedingly well qualified for its manner of living—floats in perfect security.

FLOWERS.

The interest which flowers have excited in the breast of man from the earliest ages to the present day, has never been confined to any particular class of society, or quarter of the globe. Nature seems to have distributed them over the whole world to serve as

a medicine to the mind—to give cheerfulness to the earth, and to furnish agreeable sensations to its inhabitants. The savage of the forest, in the joy of his heart, binds his brow with the native flowers of his woods, whilst a taste for their cultivation increases in every country in proportion as the blessings of civilization extend. From the humblest cottage enclosure to the most extensive park and grounds, nothing more conspicuously bespeaks the good taste of the possessor than a well cultivated flower garden: and it may very generally be remarked, that when we behold a humble tenement surrounded with ornamental plants, the possessor is a man of correct habits, and possesses domestic comforts; whilst, on the contrary, a neglected weed-grown garden, or its total absence, marks the indolence, and unhappy state of those who have been thus neglectful of Flora's favors.

Of all luxurious indulgences, that of flowers is the most innocent. It is productive not only of rational gratification, but of many advantages of a permanent character. Love for a garden has a powerful influence in attaching men to their homes; and on this account every encouragement given to increase a taste for ornamental gardening is an additional security for domestic comfort and happiness. It is likewise a recreation which conduces materially to health, promotes civilation, and softens the manners and tempers of men. It creates a love for the study of nature, which leads to a contemplation of the mysterious wonders that are displayed in the vegetable world around us, and which cannot be investigated without inclining the mind towards a just estimate of religion, and a knowledge of the narrow limits of our intelligence, when compared with the incomprehensible power and wisdom of the Creator.

Flowers are, of all embellishments, the most beautiful; and of all created beings, man alone seems capable of deriving enjoyment from them. The love for them commences with infancy, remains the delight of youth, increases with our years, and becomes the quiet amusement of our declining days. The infant can no sooner walk than its first employment is to plant a flower in the earth, removing it ten times in an hour to wherever the sun seems to shine most favorably. The school boy, in the care of his little plot of ground, relieves the tedium of his studies, and looses the anxious thoughts of the home he has left. In manhood our attention is

generally demanded by more active duties, or by more imperious, and perhaps less innocent, occupations; but as age obliges us to retire from public life, the love of flowers, and the delights of a garden, return to soothe the later period of our life.

To most persons, gardening affords delight as an easy and agreeable occupation; and the flowers they so fondly rear, are cherished, from the gratification they afford to the organs of sight and smell; but to the close observer of nature, and the botanist, beauties are unfolded, and wonders displayed that cannot be detected by the careless attention bestowed upon them by the multitude. In their growth, from the first tender shoots which rise from the earth through all the changes which they undergo to the period of their utmost perfection, he beholds the wonderful works of creative power; he views the bud as it swells, and looks into the expanded bosom; delights in its rich tints and fragrant smell, but, above all, he feels a charm in contemplating movements and regulations before which all the combined ingenuity of man dwindles into nothingness.—*Journal of Health.*

HISTORY AND HISTORICAL CYCLES.

Writers of general history have pursued two methods. Either the history of every country is given separately, or a single narrative is constructed which comprehends all. The former method produces not so much a general history as a collection of histories, and it seems to require something like an Introduction, for pointing out the connection of the whole. The latter method is liable to difficulties in the execution, and frequently falls into the former, as soon as the histories become at all independent of each other. But it is not possible to avoid separating, to a certain degree, the different histories, unless by making the arrangement purely chronological. Bossuet has done this; but the result is that the connection is lost between, not merely the several histories, but the individual events.

Another method of exhibiting the course of general history is the delineation of the chronology of the great events upon a chart. Dr. Priestley published a chart of this sort; and Mr. Francis Baily published another on the same principle, in which many mistakes of Dr. Priestley's chart were rectified. Frederic Strass, a

professor of history at Berlin, published a chart called the Stream of Time, which has been republished more than once: in this, the course of the history of each nation is represented by a stream flowing downwards, and this fanciful symbol has certainly enabled the author to present the different revolutions of history in a form very convenient to the student. These charts are of great use to persons possessing some historical knowledge, by enabling them to combine and arrange detached portions of chronology; but they are quite unintelligible to those who are altogether ignorant of the subject. Mr. Baily published, as a companion to his chart, an Epitome of Universal History, in to volumes, 8vo. This work contains some very useful tables, and is executed with great care and judgment. Together with the chart, it forms an excellent Grammar of General History; but neither the chart nor Epitome is of much use by itself, except for the purpose of occasional reference. We cannot too strongly urge the importance of using maps. No history can effectually be studied without them; but the sole object of an abridgment like the present would be missed, if it were read without a reference to the geography of the countries mentioned.

A careful attention to chronology is necessary in the study of all history. The chronology of profane history cannot be considered as accurately ascertained for many events before the time of Cyrus; that is, about the middle of the sixth century before Christ. The difficulties on this point are increased by the difference of the methods of calculation pursued by various nations.

The use of the solar year is said to have been introduced by the Egyptians. The Julian year was introduced by Julius Cæsar. It contains 365 days, with an additional day in every fourth year. This calculation, therefore, proceeds on the supposition that the solar year contains exactly 365 days and 6 hours, which is too long by 11′ 8″ 24‴.

The Gregorian year was introduced by Pope Gregory XIII. in 1582, A. D. It was a correction of the Julian year. A still further correction was introduced by Weigel, a professor at Jena. The corrected year was adopted by this country in 1752.

The method which is generally used in Europe, for numbering the successive years, must be considered as purely arbitrary. It was intended that the years should be reckoned from that in which

our Saviour was born; but Dionysius Exiguus, who established this Era in the sixth century after Christ, and Beda, an English monk, who revised the calculation in the eighth century, are supposed to have left an error of four or five years. We are therefore to place the Incarnation in the year 4, 5, or 6, B. C. (before Christ,) instead of 1, A. D. (year of the Lord;) and the common, or Dionysian Era, is thus to be distinguished from the Real Era. In the present treatise we shall refer invariably to the former, by the letters B. C. and A. D. The year 1, A. D. is that which immediately succeeds the year 1, B. C.

The Julian period was so called, because Joseph Scaliger, its inventor, took the Julian year for the base of his calculation. It depends upon certain Cycles, or revolutions of years, which we are therefore to explain.

The Solar Cycle consists of 28 years. The meaning of this is, that if we take any one of the twenty-eight years of one Solar Cycle, it agrees exactly, as to the days of the week on which the several days of the several months fall, with the corresponding year of every other Solar Cycle. It is to be observed, however, that this calculation assumes the recurrence of an intercalation at every fourth year, which is not the case since the correction of the year. These Cycles have been so arranged that the first year A. D. is the 10th of the Solar Cyle in which it occurs.

The Lunar Cycle comprehends nineteen solar years. At the end of every Cycle, the new moons are supposed to fall upon the same hour and day of the solar year. This, however, is by no means accurate. The first Cycle commences on July 16th, 433 B. C.

The Cycle of Indictions is a revolution of fifteen years, which is reckoned from 312 A. D.; 313, A. D. being the first year of the first Cycle.

The commencements of these three Cycles were arbitrarily assumed. By reckoning backwards, we find that the latest time at which the commencements of the three could have coincided, so as to be consistent with the assumptions, is in the year corresponding to 4713 B. C. This is fixed, therefore, for the commencement of the 1st Julian period, so that the 1st year A. D. is the 4714th year of the 1st Julian period. To find the next coincidence, 28, 19, and 15, being prime to each other, we must take the product of the three, or 7980 years, which, therefore, is the length of a Julian period.

The date of the Mosaic Creation is matter of some dispute: the Hebrew and Samaritan texts of the Bible, and that of the Alexandrian version, all represent this differently; and writers are not agreed even as to the result to be deduced from any of these texts. In this country, the date most commonly assigned to the event is 4004 B. C.

In the Mundane Era of Constantinople the same event is placed in the year 5508 B. C. So that the year 1 A. D. is the 5509th year of this Era. It contains two species of years, the civil and the ecclesiastical. The former begins on the 1st of September, the latter sometimes on the 21st of March—sometimes on the 1st of April.

In the Mundane Era of Alexandria, the creation is placed in the year 5502 B. C., and therefore the year 1 A. D. is the 5503rd year of this Era.

In the Mundane Era of Antioch, the Creation is placed in the year 5492 B. C, and therefore the year 1 A. D. is the 5493rd year of this Era.

The Mundane Era of the modern Jews commences on the 7th of October, 3761 B. C. The 7th of October 1 A. D. is, therefore, the first day of the 3762nd year of this Era.

From the Vermont Chronicle, February 13, 1829.

THOMPSON'S ARITHMETIC.

It would be altogether impracticable to think of noticing in the public prints every book, or even every good book, which may come from the press in these book making days. There is a certain class of books, however, in which all should feel a more than common interest. Such are the books intended to form the character and discipline the minds of those, who are just coming on to the stage, and must bye and bye occupy our places in the world. The attention of the citizens of this state should be more than usually directed to those books of this class which are recomended to their use by the proper authority, as appointed under some of our more recent and valuable laws, aiming at the advancement of our common schools. For this reason, I wish to occupy a short space in your paper with a notice of the work I have named at the head of this communication. I have looked it carefully through, and having been long engaged in the instruction of youth, I feel myself tolerably well qualified for forming a just opinion of it. My aim is not to institute any direct comparison between it and any

others; but rather to speak of it with reference to what such a book ought to be. To all of us, who may have been obliged in childhood to get a knowledge of the principles and practice of arithmetic from such crude helps as Dilworth's Assistant, or other works of the same sort, there cannot but appear a wonderful advancement, when we examine such a book as this is. It was then never intimated in the book, and rarely indeed by the teacher, that there was any *reason* for any thing which was to be done. "*Such is the rule*," was all that was known and regarded. The evil effects of a blind regard to a rule without any examination of its principles, or even a thought that it had any, had a very wide range. They were by no means confined to the science of numbers. But the case is now altered. Though some books are still used to teach Arithmetic by a set of unexplained rules, they are deservedly going out of repute. One of the first notions which a pupil ought to get about arithmetic is, that there is a reason for every step, and that he ought not to take one without seeing it. In the construction of this work, the author has pursued the method so universally and beneficially used by the ablest modern writers on mathematical subjects in France. He introduces each rule by proposing some familiar example—examining its relations—pointing out the connection of the several steps, till he gets the required answer.—The method pursued in the examination of the example is so evidently suited to all similar questions, that the learner perceives that he has found a rule which will manifestly apply to all like cases. The rule is then formally announced, and followed by numerous examples. In explaining the grounds of each rule, I think the author has succeeded in an admirable degree. I will not say that nobody could do better, or that some defects are not discoverable; but I do say, that as a whole, for simplicity and neatness of illustration, I have never seen him surpassed. In the formation of his examples he has displayed also great judgment. As far as possible, they represent such transactions as daily occur in business. I think also the anthor has displayed great judgment in the order in which the several rules follow each other. It is very true, that the subjects of *Interest*, *Fellowship* and many others—considered scientifically—come under the general subject of *proportion*; yet every one knows that they are never managed in practice as if they did, because, in *most* cases in business, one of

the terms being a unit, it is more convenient to use the easier method of multiplication or division. In reality, it would be strictly scientific to consider multiplication and division themselves as cases under proportion. They truly are so, though no one thinks it worth while to arrange them so in common arithmetic. The author has wisely left the consideration of proportion in a more general form, till after the rules which I have mentioned.

A very ample and neat treatise on mental arithmetic precedes the written which can be used or not, as each teacher finds occasion. There are also in the latter part, many interesting rules and forms, on matters, not coming exactly within the range of common arithmetic, yet of much value to every one; and a small treatise on book-keeping. I have detected a few errors of typography; yet as a whole, I think it very accurately printed. I think however, the author has erred a little, from a desire to furnish a large amount of matter for a small sum of money. He has succeded in this point admirably; but it would have better suited my views of expediency, had he printed it throughout in type as large as the largest used in it. It would also be better, if small type must be used, to have it change places with the larger. From its being used in the *investigations* of the rules, lads who dislike labor will be more induced to pass over them, or get them imperfectly. It would be better to have the work cost a little more, and have it in a larger type. Some room might be saved, also, by omitting the questions which are placed for reviewing. I know that it is very fashionable to put series of questions in our school books; but it is a fashion, like many others, better omitted than followed. The living instucter can much better shape his questions to what he knows the need of his pupils demands. If he cannot he is not fit to teach; and the scholar who can get along without a teacher, (as in fact I think almost all can, with the aids of this book) does not need the questions, and will pay no attention to them. The questions are as well put, however, by the author, as they could have been by any one, who might make them with reference to the nature of the subject, rather than the peculiar state of the pupil's mind. I hope such defects as occur will be remedied in the next edition; for I think it is a work, which deserves an extensive circulation; and will have it or my judgment greatly deceives me.

AN INSTRUCTER.

MILK TREE.

I chanced to stop at a little Indian settlement of *Byawadanny*, just below the first rapids of the Demerara, and there I was told of a tree called by the Indians *Hya-hya*, the milk of which was both drinkable and nutritrous.

We had sent a lad to search around for the tree, and he returned in a short time to tell us he had met with it. We followed him to the spot, and found that he had felled the tree. It had fallen across a little rivulet, the water of which when we arrived was completely whitened from its juice. On striking a knife into the bark, a copious stream of milk-like fluid immediately followed. Our guide drank of it, and Mr Couchman and myself tasted it after him. It was thicker and richer than cow's milk, and destitute of all acrimony, leaving only a slight feeling of clamminess on the lips. I had already seen that it mixed freely with the water of the little stream, and as I slept that night near the spot, the next morning Mr Couchman and myself drank it in warm coffee. With this it commingled equally well, and lost all the viscosity before perceptible in its pure state, so much so, as to appear to us incapable of being distinguished from animal milk.

The milk I send you has now been in bottle thirtysix days: it did not commence to curdle before the seventh day after it was taken from the tree, and even then the process appeared exceedingly slow; so much so, that on the twelfth day I used some of another portion, which had been bottled at the same time, in tea, without its being distinguished from animal milk by those who drank it.—*Edinburgh Philosophical Journal.*

A PROBE.—The man who is readier with a sermon than a sixpence to the mendicant at his gate—who is so pious himself that he is afraid of encouaging profigacy by giving alms to beggars of suspicious morality—who stints his table, lest excess of creature comforts should beget pride and lasciviousness in his household, and is austere and harsh to his dependants, lest by mildness he might make them forget they are servants—may be a very respectable sort of person, and of good repute with the world, yet he is but an indifferent Christian, let his attendance at church or at meeting-house be as punctual as it may.—*Family Library.*

METEOROLOGICAL

BURLINGTON, Vt., Lat. 44° 27′. Long. 73° 14′. Altitude above Lake

1832.		Thermometer.			Barometer.			RAIN	Winds.		
JULY		S. R.	1 P.M.	9 EV.	S. R.	1 P.M.	9 EV.	Inch's	Morning.	Noon.	Evening
1	G	69	84	79	29.00	28.80	28.20		S.	S.	S.
2	2	69	89	78	28.80	28.55	28.60		S.	S.	S.
3	3	59	80	68	28.85	28.60	28.95		S.	S′.	N′.
4	4	56	80	71	29.10	28.90	29.00		N.	N.	S.
5	5	66	87	74	29.05	28.75	28.90		S.	S.	E.
6	6	66	81	70	28.95	28.70	28.80		S.	S.	N.
7	7	64	74	66	28.95	28.85	28.90	.51	N.	N.	N.
8	G	64	76	64	28.90	28.80	28.95		S.	S.	N. E.
9	2	62	75	61	28.80	28.75	28.85	.03	E.	S.	S.
10	3	59	67	61	28.75	28.75	29.00	.36	S.	N.	S.
11	4	57	62	57	29.00	29.00	29.00	.20	N. E.	N. E.	N. E.
12	5	52	58	56	28.90	28.90	28.90	.38	N. W.	N. W.	E.
13	6	50	61	54	28.90	28.90	29.00	.28	N.	W.	N.
14	7	57	72	59	29.10	29.05	29.15	.17	N. W.	N. W.	N.
15	G	55	73	62	29.30	29.20	29.20		N.	N.	N.
16	2	52	75	64	29.40	29.10	29.10		N.	S.	S.
17	3	54	76	72	29.30	29.10	29.10		S.	S.	S.
18	4	64	84	71	29.10	29.10	28.90		S.	S.	S′.
19	5	68	78	65	28.80	28.75	28.80	.18	S′.	S′.	S.
20	6	62	75	65	28.80	28.80	28.70		S.	N.	N.
21	7	61	61	58	28.75	28.80	28.95		N.	N.	N.
22	G	55	70	62	29.10	29.10	29.20	.05	N.	N.	N.
23	2	51	76	68	29.35	29.10	29.10		N.	S.	S.
24	3	62	67	64	29.15	29.10	29.00		S″.	S′.	S′.
25	4	63	70	64	28.90	28.75	28.80		S.	W.	N.
26	5	56	70	58	28.90	28.85	29.00	.57	S.	S.	N.
27	6	52	71	64	29.20	29.15	29.30	.11	N.	N. W.	E.
28	7	54	77	68	29.35	29.00	29.15		S′.	S.	S.
29	G	66	70	65	29.00	28.80	28.90		S′.	S.	S. W.
30	2	62	77	62	29.00	28.90	29.05	.66	S.	S.	S.
31	3	62	73	64	29.20	29.10	29.30	.02	N. W.	N.	N.
MEAN		63.2	73.8	68.5	28.98	28.90	28.97	3.52	Gen'l mean Ther. 68.5		

JOURNAL.

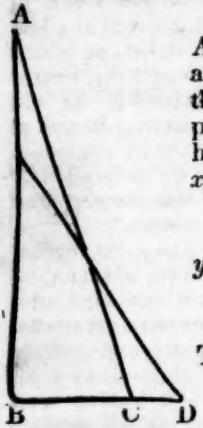
Champlain 250 feet. Distance from the Lake, one mile East.

Weather.				Remarks.
D.	Morn.	Noon.	Even'g.	
1	*Clear*	*Clear*	*Fair*	Smoky
2	*Fair*	*Clear*	*Cloudy*	3 P. M. Ther. 91° Bar. 28.40, Thun.
3	*Clear*	*Cloudy*	*Cloudy*	Smoky.
4	*Clear*	*Clear*	*Clear*	Smoky.
5	*Clear*	*Clear*	*fl Clouds*	Thunder.
6	*Clear*	*Cloudy*	*Rain*	Thunder Showers.
7	*Cloudy*	*Fair*	*Fair*	Foggy Morning.
8	*Cloudy*	*Fair*	*Clear*	Thunder Showers.
9	*Cloudy*	*Cloudy*	*Clear*	Thunder Showers.
10	*Cloudy*	*Cloudy*	*Fair*	Thunder Showers.
11	*Fair*	*Rain*	*Rain*	
12	*Rain*	*Rain*	*Cloudy*	
13	*Cloudy*	*Cloudy*	*Cloudy*	
14	*Cloudy*	*Fair*	*Fair*	
15	*Cloudy*	*Clear*	*Clear*	
16	*Fair*	*Clear*	*Fair*	
17	*Clear*	*Clear*	*Fair*	Smoky.
18	*Fair*	*Fair*	*Clear*	Smoky.
19	*Fair*	*Fair*	*Fair*	Showers.
20	*Cloudy*	*Fair*	*Cloudy*	
21	*Cloudy*	*Rain*	*Cloudy*	Showers.
22	*Cloudy*	*Fair*	*Clear*	
23	*Clear*	*Clear*	*Clear*	Copious dew.
24	*Fair*	*Rain*	*Clear*	Smoky.
25	*Clear*	*Fair*	*Fair*	Thu. Sh. Water fell .55 in. in 7 min.
26	*Fair*	*Fair*	*Rain*	Showers.
27	*Clear*	*Clear*	*Clear*	Aurora Borealis.
28	*Fair*	*Fair*	*Clear*	Smoky.
29	*Fair*	*Cloudy*	*Rain*	
30	*Rain*	*Fair*	*Clear*	Thunder Showers.
31	*Cloudy*	*Fair*	*Fair*	

Barometer, 29.05 inches.

Additional Remarks.—By the foregoing table it appears that the mean temperature of July this year, was 68 1-2 degrees, which is 1.6 deg. colder than July 1828; and .3 deg. warmer than the mean of Doct. Saunders' observations. Range of the thermometer from 50 to 90 degrees, equal to 41 degrees. Range of Barometer from 28.40 to 29.40, equal to 1 inch.

SOLUTION OF THE QUESTION IN NO. 6.



Question.—1. Let A B=the height of the house, A C=E D=the length of the ladder and B C=12 and B D=20 are the two distances, of the foot of the ladder from the base of the house. Then putting x=the length of the ladder and y=the height of the house we have

$x^2 = y^2 + 12^2$ and $x^2 = 20^2 + (y-4)^2 = 20^2 + y^2 - 8y + 16$.

Then $y^2 + 12^2 = 20^2 + y^2 - 8y + 16$, or

$y^2 + 144 = 400 + y^2 - 8y + 16$, or by transposing

$8y = 416 - 144 = 272$, and $y = \frac{272}{8} = 34$ feet

Then by substituting x^2 $34^2 + 12^2$ and $x = \sqrt{1300} = 36.05$ feet. R. & S.

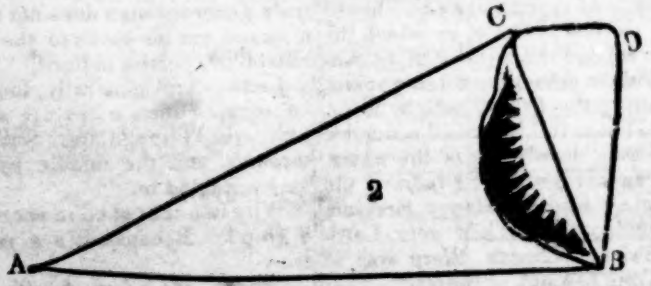
Question—2. Let B (fig 2) be the first station from which the bearing of the wharf at A was observed and the crooked line from B to C that in which the courses and distances were taken, and C the second station from which the bearing of A was observed. Then calculating the latitude and departure for these courses and distances we have the northings 50.76 ch. and the balance of westings 9.06 ch. from which it appears that in the right triangle B C D, B D=50.76 ch. and C D=9.06 ch

Then B D : D C : : *rad* : *Tang* : B.=10° 7′

and *rad* : *sec.* B : : B D : B C=51.46 ch.

Then *Si.* A : B C : : *Si.* C. : A B=178.64 ch. } Answers.

and *Si.* A ; B C : : *Si.* B : A C=186.67 ch. } J. J.



Question. Supposing two square fields containing 100 acres each, to lie side by side; it is required to draw a straight line in such manner as to cut off from one field *two* acres and from the other *four* acres. R.

SUMMARY.

A PATIENT LAD.—"Ben," said a father the other day, "I'm busy now—but as soon as I can get time, I mean to give you a flogging." "Don't hurry yourself pa," replied the patient lad—"I can *wait*."

FAIR PLAY.—A gentleman being forced to sell a pair of his oxen to pay his hired servant's wages, told the servant he could keep him no longer, not knowing how to pay him the next year. The servant answered him, he would serve him for more of his cattle.—"But what shall I do," said the master, "when all my cattle are gone?" The servant replied, "you may serve me, and so you will get your cattle back again."

INJURIES.—Hath any wounded you with injuries, meet them with patience; hasty words rankle the wound, soft language dresses it, forgiveness cures it, and oblivion takes away the scar.

READY ANSWERS.—Chesterfield said to his son, trust no man who cannot give you a ready answer;—if men will be credited they must first pay ready money.

ANECDOTE.—Lord Keelie was once amusing his company with an anecdote of a sermon he had heard in a church in Italy, in which the priest related the miracle of St Antony, when preaching on ship board, attracting the fishes, which, in order to listen to his pious discourses, held their heads out of the water. "I can perfectly well believe the miracle," said Mr Henry Erskine, "How so?" "When your Lordship was at Church, there was at least one fish out of water."

Red-haired men make the best troops, for they always carry their *fire-locks* upon their shoulders.

TAKEN BY SURPRISE.—At the time when Mr Peale was exhibiting his beautiful picture of the Court of Death, in Boston, he sent the late Rev. Dr Osgood a ticket, on which was inscribed, "Admit the bearer to the Court of Death;" the old gentleman never having heard of the picture, was utterly confounded.—"I expect to go before long," said he,—"But I was not prepared for so abrupt a summons."

A COMPANION.—The most agreeable of all companions is a simple, frank man, without any high pretensions to an oppressive greatness; one who loves life and understands the use of it; obliging—alike at all hours; above all of a golden temper, and steadfast as an anchor. For such an one, we gladly exchange the greatest genius, the most brilliant wit, the profoundest thinker.

SEVERE GOVERNMENT.—Sir Thomas Moore used to say that severe government is like a severe schoolmaster—it makes the ferule do what its own patience and skill cannot.

GRATITUDE.—He that banishes gratitude from among men, stops up the stream of benificence; for though, in conferring kindness, a truly generous man does not aim at a return, yet he looks to the qaulities of the person obliged.

LAWS—Are generally found to be nets of such a texture as the little creep through, the great break through, and the middle size are long entagled in.

Why is a tear shed in secret like a ship? Because it's a *private tear*.

There are few families but what are at one end related to the greatest princes, and at the other to the meanest peasants.

POETICAL DEPARTMENT.

Selected for the Repository.

THE COTTAGE.

The past is all a dream to me,
  Before that thou wert mine;
To-day, and days to come, are dear,
  Because our fates entwine.
The cottage by the prairie side,
  That dearest spot on earth,
Where cheerfulness and happy love
  Sit smiling by the hearth—
Where brightest flowers bloom around,
  Nor cares nor crowds intrude,
With discord or unhallowed mirth,
  To mar the solitude,
Shall be our blissful residence,
  By all the world forgot;
While truth, and love, and innocence,
  Shall bless our humble cot.

Here rested first the blooming bride,
  Whose heart confessed her mine;
The rose and vine our hands have trained,
  Here sweetly interwine;
The rose shall fade, the vine shall droop,
  The autumn sun shall sear
The verdant leaf with yellow tinge,
  On each revolving year;
But love, with its own blessed home,
  Smiles brightly as before,
Though penury, with haggard scowl,
  Sits frowning at the door;
Forgotten by a troubled world,
  Contented with our lot,
While hearts unite, and roses twine,
  And virtues grace our cot.

THE BEACON-LIGHT.

Darkness was deep'ning o'er the seas,
  And still the hulk drove on;
No sail to answer to the breeze,
  Her masts and cordage gone:
Gloomy and drear her course of fear,
  Each looked but for a grave,
When full in sight the beacon-light
  Came streaming o'er the wave!

Then wildly rose the gladd'ning shout
  Of all the hardy crew—
Boldly they put the helm about,
  And through the surf they flew;
Storm was forgot, toil heeded not,
  And loud the cheer they gave,
As full in sight the beacon-light
  Came streaming o'er the wave!

And gaily of the tale they told,
  When they were safe on shore,
How hearts had sunk, and hopes grown cold,
  Amid the billow,s roar;
That not a star had shone afar,
  By its pale beam to save,
When full in sight the beacon-light
  Came streaming o'er the wave!

Thus in the night of natures gloom,
  When sorrow bows the heart,
When cheering hopes no more illume;
  And transports all depart;
Then from afar there shone a star,
  With joyous light to save,
And full in sight its beacon-light
  Comes streaming o'er the wave.

FROM THE ITALIAN OF PETROCCHI.

I asked of *Time*, "Who raised your structure fair,
  Which thy stern power has crumbled to decay?"
He answered not, but fiercely turned away,
And fled on swifter pinions through the air.
I said to Fame, "O thou, who dost declare
  With lofty voice the glories of the past,
  Reveal the tale." Her eyes on earth she cast,
Confused and sad, and silent in dispair.
Then turned I, wondering, where with ruthless stride
  I saw Oblivion stalk from stone to stone,
Over the fallen towers. "O tell," I cried;
  "Dark power, unvail the truth." But, in dread tone,
"Whose they were *once*," he sullenly replied,
"I know not—seek not—*Now* they are my own.

For the Green Mountain Repository.

THE HUNTER AND THE SKUNK.

A sportsman once on Game intent—
No matter where—a hunting went—
And wandering round with searching eye,
A beauteous creature did espy.
By jingo now that black and white
Shall be my own as true as light;—
He said; and to his eye he brought
His faithful gun, and quick as thought,
The vivid flash—the deafining sound
Spread mid the trees and rocks around.
  The smoke dispelled, the beast he sees
Flouncing and struggling 'mong the trees,
And forward rush'd without delay,
The wounded beast to seize and slay.
But yankee Skunk tho' wounded sore
By fifteen partridge shot, or more,
Resolved revenge—reserved his fire—
Till Sportsman should approach him nigher,
And then with aim *his* charge let fly
Point-blank into the Sportsman's eye.
A scream—a curse—and retreat—
Did not the achievement all complete;
For many a day the anointed head,
Wher'ere it moved the perfume spread. T.